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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,277

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Maurice William Slack

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EXAMINER

KOEHLER, CHRISTOPHER M

ART UNIT

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3726

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/528,277	<b>Applicant(s)</b> SLACK, MAURICE WILLIAM	
	<b>Examiner</b> Christopher M. Koehler	<b>Art Unit</b> 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-25 and 27-39 is/are pending in the application.
- 4a) Of the above claim(s) 27-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-16 and 18-25 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of claims 12-25 in the reply filed on 8/4/2009 is acknowledged.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12-14, 16, 18-21, 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Benteler et al (US Patent No. 4,319,471).

**Claim 12:**

Benteler teaches a method for producing a complex shape hollow tubular part, comprising the steps of: placing a length of metal tubular work piece (55), the work piece having a longitudinal axis (vertical in figure 1), a sidewall and a central opening (hollow cylindrical tube), inside a confining surface comprised of mold elements (40), the mold elements including cavities (next to 40") spaced and shaped in the configuration of desired side wall ribs, the mold elements being supported substantially against expansion radially outward from their position about the tubular work piece (30, 31 figures 1 and 2); inserting a mandrel (11, 26) having a cylindrical exterior into the tubular work piece and sealing between an outer diameter portion of the mandrel and an inner diameter portion of the tubular work piece to define a sealed annular space

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between the mandrel and the tubular work piece (figure 1; col. 6, lines 51-60); applying sufficient fluid pressure to the annular space to force the tubular sidewall radially outward against the confining surface and into the mold cavities to plastically deform the side wall to form ribs on the side wall (figure 1; col. 8, lines 58-68); and removing the tubular work piece from the confining surface (col. 9, lines 17-39).

The examiner notes that the recitation of the formed tubular part being a centralizer is merely an intended use for the part formed by the method claimed and nothing in the steps method claimed limits the forming method to only form centralizers. Furthermore, Benteler explicitly teaches that the mold elements and configurations can be readily modified by those skilled in the art of tube forming to form tubes of various configurations (col. 9, lines 40-58) thus anticipating applicants forming method and intended use.

Claim 13:

Benteler teaches that the each of the mold elements has a cylindrical inner diameter (40") and an end (top face, bottom face as viewed in figure 1 and left face right face as viewed in figure 2) that abuts an adjacent one of the mold elements (40); each cavity has a portion contained within one of the mold elements (left side) and another portion contained within the adjacent one of the mold elements (right side); and removing the tubular work piece (55) from the confining surface comprises sliding the mold elements (40, left and right) in axially opposite directions off of the tubular work piece (see figure 2 where the molds are separated axially),

Claim 14:

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Benteler teaches that each of the cavities has opposite ends (40'' of the mold element and 40'' of the adjacent (above) mold element) spaced apart from each other along a length of the confining surface (figure 1).

Claim 16:

Benteler teaches that the mold elements contain axially extending slits (each mold element 40 is sliced in half see figure 2) to permit their circumferential expansion for removal thereof from the tubular work piece.

Claim 18:

Benteler teaches that each mold element has a cylindrical inner diameter (40'') and an end (top face, bottom face as viewed in figure 1 and left face right face as viewed in figure 2) that abuts an end of an adjacent one of the mold elements (40); and each cavity has a portion extending to one of the ends of the mold elements (left side and right side), the portions of the cavity joining each other (figures 1 and 2).

Claim 19:

Benteler teaches that the mold elements contain axially extending slits (each mold element 40 is sliced in half see figure 2) to permit their circumferential expansion.

Claim 20:

Benteler teaches that the step of sealing between an outer diameter portion of the mandrel and an inner diameter portion of the tubular work piece comprises placing annular seals (13) between the tubular work piece (55) and the mandrel (11, 26) at axially spaced apart distances (one on each mandrel).

Claim 21:

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Benteler teaches that upon removal of the formed tube from the confining surface, the tubular work piece sidewall is of substantially uniform thickness (see figure 1).

Claim 24:

Benteler teaches that removing the formed tube from the confining surface includes expanding the mold elements (figure 2) to overcome their hoop stress.

Claim 25:

Benteler teaches that the ribs are formed to protrude smoothly from the sidewall cylindrical outer surface (figure 1).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benteler in view of Marando (US Patent No. 6,497,030) and further in view of Kirk et al. (US 2003/0010540).

Claim 15:

Benteler teaches the structure above but fails to explicitly teach that the ribs are helical. However, Benteler explicitly teaches that the mold elements and configurations can be readily modified by those skilled in the art of tube forming to form tubes of various configurations (col. 9, lines 40-58) thus anticipating applicants forming method

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and intended use. Furthermore, it is known in the art to form helical ribs in tubular parts through pressure forming (see generally Marando) and to use helical ribs on centralizers (see generally Kirk et al.). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the mold elements of Benteler to pressure form a part with helical ribs as taught by Marando to be used as a centralizer as taught by Kirk in order to adapt Benteler to the method of making a different configuration (as motivated in Benteler) therefore expanding the utility of the apparatus of Benteler.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benteler in view of Kirk et al. (US 2003/0010540).

Claim 22:

Benteler teaches the structure above but fails to teach coating the inner surface once the part has been removed from the confining surface.

Kirk teaches applying a low friction coating to the inner surface of a centralizer (paragraph [0023]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a low friction coating to the interior of a centralizer so that it can rotate and slide freely on the casing (Kirk paragraph [0039]).

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benteler in view of Williamson et al. (US Patent No. 6,092,593).

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Benteler teaches the structure above but fails to teach treating exterior surfaces of the ribs to increase their wear resistance once the tubular work piece has been removed from the confining surface.

Williamson teaches spray-welding a wear coating onto an external surface of centralizer ribs (Williamson col. 8, lines 15-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a wear coating to the ribs so that the can resist wear caused by downhole use (Williamson col. 8, lines 15-17).

#### ***Allowable Subject Matter***

8. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach, alone or in combination, the structure of the confining surface described in claim 17 as being comprised of a cylindrical bell with a tapered bore, a collet with a tapered outer wall with the mold elements located therein and the removal of these components in the removing step in combination with the other limitations of claims 12 and 17.

#### ***Response to Arguments***

10. Applicant's arguments with respect to claims 12-25 have been considered but are moot in view of the new ground(s) of rejection.



***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Koehler whose telephone number is (571)272-3560. The examiner can normally be reached on Mon.-Fri. 7:30A-4:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. M. K./  
Examiner, Art Unit 3726

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726